

REMARKS

Claims 1, 7 and 11 have been rejected under 35 U.S.C. § 112 second paragraph as being indefinite. In particular, Claims 1, 7 and 11 are cited as being unclear with the term "changes at a relatively slow and well defined rate". Further the feature "with one another" in Claim 1, line 11 is cited as not having a clear meaning.

Claims 1, 7 and 11 as now amended further make clear the meaning of how slow or how well the rate should be defined. Specifically, the foregoing amendments amend Claims 1, 7 and 11 to recite "...at least one dynamic element that changes at a relatively slow rate as compared to other dynamic data or that changes at a well defined rate with respect to other dynamic data..." Support for this amendment is found at least on Specification page 6, lines 3-7 and page 37, lines 1-5 as originally filed.

Further Claim 1 has been amended to recite that the executable code and scheduler component are loaded onto a platform in connectivity with a web server and in a manner in which said executable code and said scheduler component are in connectivity with each other. Support for this amendment is found at least on Specification page 37, line 6 through page 38, line 12 as originally filed.

No new matter is being introduced.

Thus, Claims 1, 7 and 11 as now amended are believed to meet the requisites of § 112. As such the rejection under § 112 is believed to be overcome.

Claims 1-6 have been rejected under 35 U.S.C. § 103 as being unpatentable over Li (U.S. Patent No. 6,591,266) in view of Bates et al. (U.S. Patent No. 6,275,858). In support of this rejection, the Office Action states that Li does not explicitly teach a web page that changes at a relatively slow or well defined rate and executable code that generates the quasi-static copy of said web page is scheduled at periodic intervals. However, Bates in the same field of endeavor is cited as teaching a web page that changes at a relatively slow or well defined rate and executable code that generates the quasi-static copy of said web page is scheduled at periodic intervals. Applicants argue as follows.

By way of background, various attempts of managing web pages in a manner that relieves demand on a server are provided in the art. In various caching approaches, there needs to be a

way to ensure validity of cached web pages (where changes have been made to the corresponding database version of the Web page contents). In some methods respective expiration of the cached pages and forced periodic refreshing of cached web pages are used. In another approach where the web page contains dynamic elements, an HTML page may be coded in Active Server Pages (ASP) or similar interpreted language along with static text. In such a case, upon user request for a web page, a web browser requests invocation of an executable. The invoked executable executes the ASP code to output static HTML code "as is" and to fill dynamic elements at run time by performing database accesses and the like.

The present state of the art requires that a web page be either static or dynamic in nature. As a result, a page coded in ASP, dynamic in nature, will often require the invocation of an executable and the attendant access to an operational database in order to fulfill a request for the web page generated by the executable. Such database access can result in redundant requests of an operational database the result of which may be slower system response times.

However, Applicants find that even dynamic data elements are in fact static over well defined periods of time. Applicants set forth that it would be desirable to devise a method whereby infrequently changing dynamic data could be handled like static HTML data and stored for immediate retrieval without the necessity of an operational database query. There is therefore a need in the art to devise a method whereby infrequently changing data contained within a web page can be generated as a static page, in a format such as HTML, rather than as a web page dynamically created by the execution of ASP or other code. Such a methodology would serve to reduce the bottlenecks formed when data is requested which requires interaction with the operational database.

The present invention is directed to a method for providing a requestor with access to dynamic data via quasi-static data requests. To accomplish this, the present invention recognizes that certain web pages (classified as 'dynamic' in the prior art) can be effectively treated as static pages. In particular, the present invention defines these certain web pages as web pages having dynamic elements that change infrequently, each at a rate that is slow compared to other dynamic data. The prior art does not recognize such dynamic elements or define and determine such web pages for separate treatment.

Neither Li nor Bates provide an approach that recognizes certain dynamic elements of a web page, rather these references generalize the whole page as dynamic. Li criticizes and discourages the periodic refreshing of cached pages. Instead, Li focuses attention on synchronizing the data stored as web pages in cache with the corresponding data stored in a database. In particular, Li creates and maintains an association (or mapping) between the URL of the requested web page and the data queries/ external source operations made in generating the web page. A content change monitoring component monitors and detects changes to data in the database (or external source) when a data change is detected, the content change monitoring component determines from the associations (mapping) which queries/operations and ultimately which web page is affected by the changed data. See column 4, lines 34-57 and column 8, lines 36-63.

Bates discloses a refresh manager that enables intelligent, automated refreshing for individual user selected Internet web pages. The page data structure is persistent from one run of the browser program to the other. The page data structure includes a universal resource locator (URL), a refresh interval, a weekend interval, a last time refreshed, a time of day array, a cycling redundancy check (CRC) or hash value, an auto refresh on/off, and a last time accessed. The page data structure is stored as a list or array of the records for each user selected Internet web page in a bookmark list or favorites data for a particular user. The refresh interval defines a time interval to refresh a page in cache when this much time has passed. The weekend interval defines a refresh time interval to refresh a page in cache that is used only on weekends. A time of day array is a collection of refresh intervals such as one for each hour which is used to a page during a particular hour of the day. The CRC or hash value is an integer value used to determine if a page has changed, for example determined by adding together all the bytes in a page. See Bates col. 4, lines 19-40.

Thus, neither Li nor Bates imply or suggest the claimed limitation of "...at least one dynamic element that changes at a relatively slow rate as compared to other dynamic data or that changes at a well defined rate..." as recited in base Claim 1 as now amended. Dependent Claims 2-6 inherit this claim limitation. Emphasis is placed on the dynamic element (element level) as distinguished from dynamic page (whole web page level). None of the prior art appreciate this element level aspect of the present invention, which Applicants find is key to their approach.

Further, where Li discounts and teaches away from periodic refreshing of cached web pages (column 4, lines 34-57), it would not have been obvious to combine Li with Bates's method/apparatus for automated refreshing of web pages. Even if combined, the present invention as now claimed would not result, where neither Li nor Bates consider defining the subject web page with "at least one dynamic element" of the web page "...that changes at a relatively slow rate as compared to other dynamic data..."

Thus, the § 103 rejection in view of Li and Bates is believed to be overcome. Withdrawal of this rejection is respectfully requested.

Claims 7-8, 10-12 and 14 have been rejected under § 102(e) as being anticipated by Bates et al. (U.S. Patent No. 6,275,858). As argued above, Bates does not imply or suggest the "dynamic element that changes at a relatively slow rate as compared to other dynamic data..." as in the claimed present invention. Throughout Bates a general class of dynamic web pages is described. No appreciation is given to the certain dynamic web pages of the present invention, i.e., those having a dynamic element that changes at a relatively slow rate as compared to other dynamic data which is key to the present invention.

Base Claims 7 and 11 recite this claim limitation. Dependent Claims 8, 10, 12 and 14 are dependent on one of base claims 7 and 11 and thus inherit the claim limitation. As such this rejection under § 102 is believed to be overcome and withdrawal of the rejection is respectfully requested.

Claims 9 and 13 have been rejected under § 103 as being unpatentable over Bates et al. in view of Helbig (U.S. Patent Application Publication 2002/0116257). Claim 9 is dependent from Claim 7 and Claim 13 is dependent from Claim 11 thus the foregoing arguments apply here.


Helbig does not cure Bates's lack of appreciation of dynamic elements of a web page with a changing rate that is relatively slow as compared to other dynamic data. Thus no combination of Helbig and Bates provide the claimed limitation "at least one dynamic element that changes at a relatively slow rate as compared to other dynamic data..." in base Claims 7 and 11. Therefore dependent Claims 9 and 13 inheriting this claim limitation are not made obvious by Bates in view of Helbig. This § 103 rejection is believed to be overcome and withdrawal is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (Claims 1-14) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
Mary Lou Wakimura
Registration No. 31,804
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 